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CURRENT LITERATURE.

BOOK REVIEWS.

Photomicrographs of plant rusts.

THERE is a difficulty in studying microscopic fungi, from which the student of phanerogamic plants is exempt. It arises from the minuteness of the parts, making it necessary to prepare a slide and place it under the microscope, and sometimes more than one slide, before the essential characters can be seen. As only one slide can be examined at a time, the student must carry a mental picture of the various forms previously examined which he desires to compare with the one under examination. He cannot lay his two or more objects side by side and have them both or all equally under consideration at the same time.

One of the best known means for reducing this difficulty to a minimum is the use of photomicrographs. When skilfully prepared under uniform conditions and magnification they are of great assistance in making close comparisons between a few forms, and immensely facilitate the rapid review of a large series.

Recognizing these facts, together with the additional one that many species are so rare that the student can not hope always to secure a specimen, Professor E. W. D. Holway, of the University of Minnesota, has undertaken to publish a complete series of photomicrographs of the spores of the North American rusts. The work starts out with the genus Puccinia, taking the species up systematically according to hosts. The first number begins with the order Ranunculaceae, having seventeen species, followed by nine other orders. The 45 species of this first number are illustrated by 62 figures, all but one representing the spores as seen in the field of a microscope under a magnification of 250 diameters. The photogravure plates show almost the same perfection of detail as the original photographs, both being of superior quality.

The text accompanying the plates is of the nature of a monograph. Each species is fully described, with synonymy, distribution, and citation of *exsiccati*. The work is all founded upon the specimens and treatises in the herbarium of the University of Minnesota, and is carried out with much critical insight.

The number forms a highly valuable addition to the literature of the plant rusts, and especially so on account of the illustrations, few botanists having such skill in the production of photomicrographs as the author.—J. C. Arthur.

Luther Burbank.

THOSE who know Mr. Burbank personally admire his gentle and simple character; they who know his work acclaim him as a genius in plant breeding

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¹ Holway, E. W. D., North American Uredineae, Vol. I, part 1. 4to. pp. iii+32. pl. I-10. Minneapolis, 1905. \$2.00.